

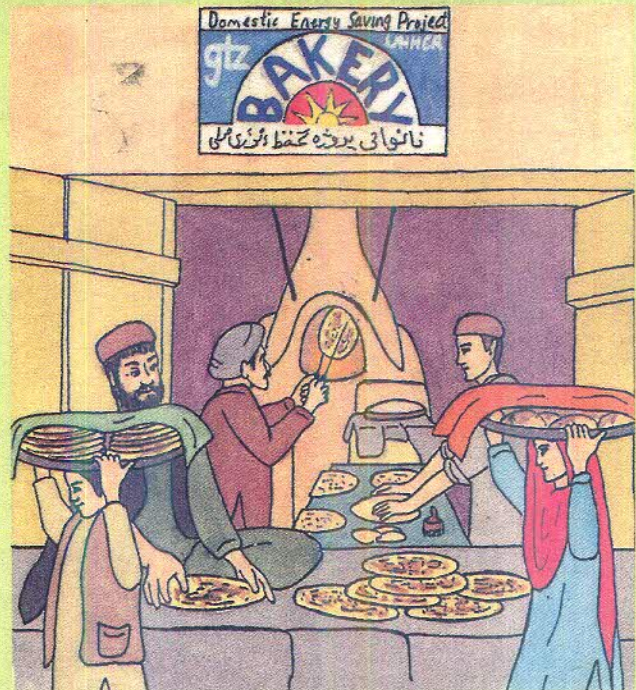
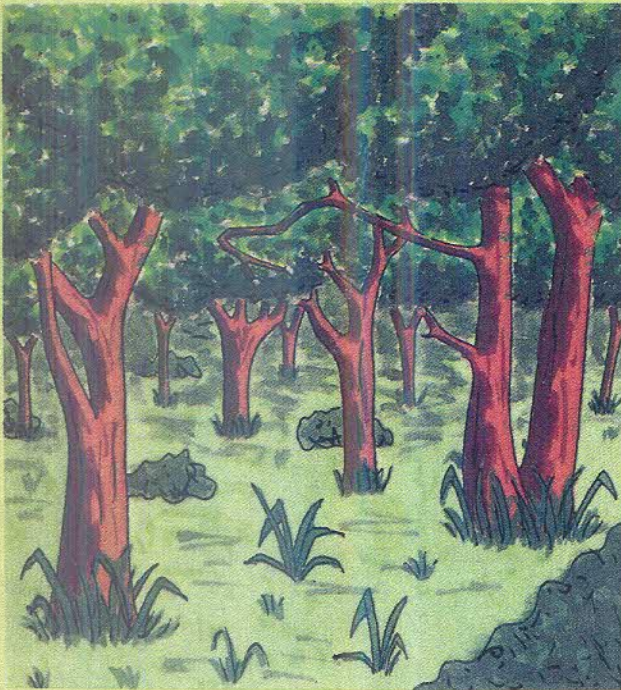
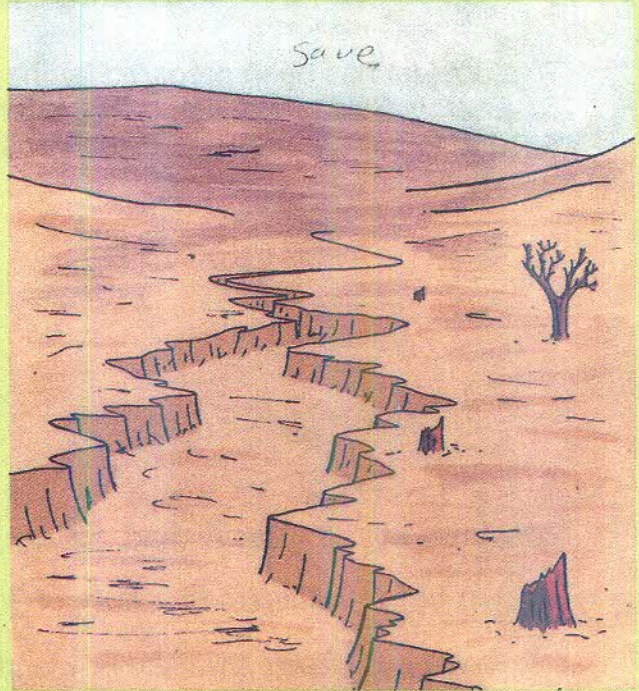
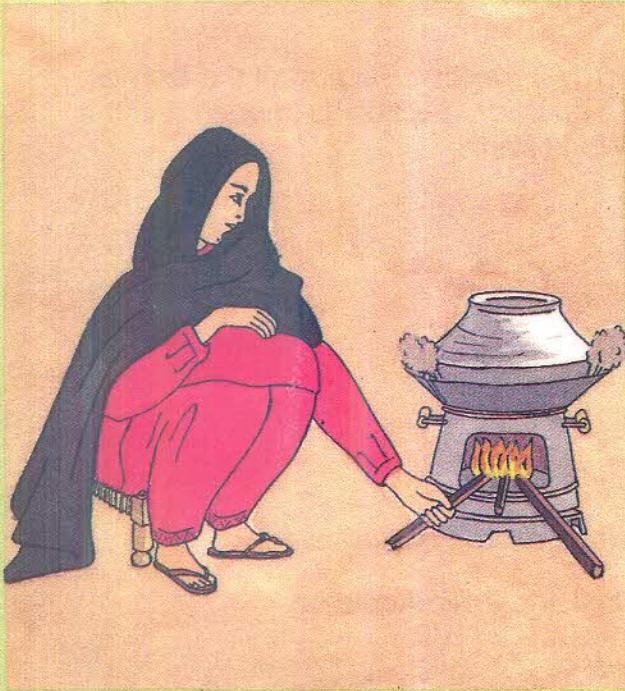
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SAVE OUR TREES

Save



A guide to saving energy

SAVE OUR TREES

A guide to saving energy.

This booklet has been prepared by the Energy Education Section of the Domestic Energy Saving Project. The Energy Education Section is funded by the Second Income Generating Project of the World Bank.

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TREES AND ISLAM

"Then which of the favours of your Lord will you deny?"

Para 27, Surah Al-Rehman

Almighty Allah has blessed us with many wonderful favours or gifts for our use. Trees are amongst the most beneficial favours given to us by Him.

Trees; Shukran-e-Nemat or Kufran-e-Nemat?

Examples of Shukran-e-Nemat and Kufran-e-Nemat occur many times in the Quran and Haddiths. They explain how Allah's favours should be used by us according to the needs of everyone.

If trees are used for justified purposes which benefit everyone now and in the future, this is Shukran-e-Nemat. This pleases Allah because it shows respect for His gift of trees.

If trees are wasted or used for selfish purposes which only benefit a few individuals, this is Kufran-e-Nemat. This displeases Allah because by not using His gift of trees for the benefit of everyone, now and in the future, we are abusing His favours and showing disrespect.

"The one who has cut a tree in the shelter of which people or travellers used to sit will be thrown into hell with his mouth down."

Abu Dawood Sharif, 355.

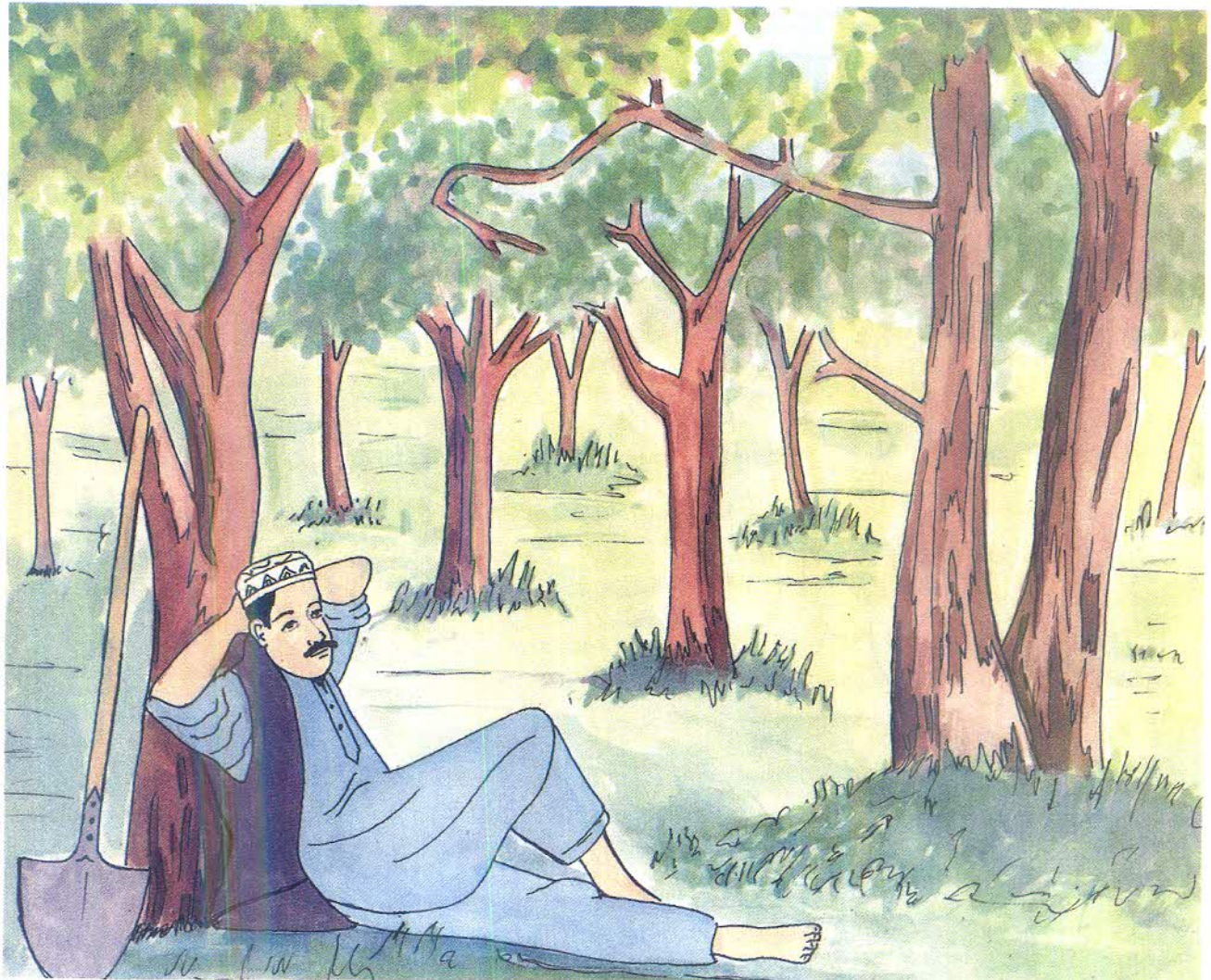
PART ONE - THE NEED FOR ACTION



Every year Northern Pakistan and Afghanistan loses thousands of acres of forest. This is due to people cutting down more and more trees for fuel and timber. Now trees are being cut down faster than new ones can grow to replace them, so gradually the forests are disappearing. This is a problem called deforestation. If this continues then some day soon there may be no forests left. Action is needed now if we are to save our trees and preserve all the benefits they bring, both for ourselves and for our children's children.

1.1. THE ADVANTAGES OF TREES

We need trees !

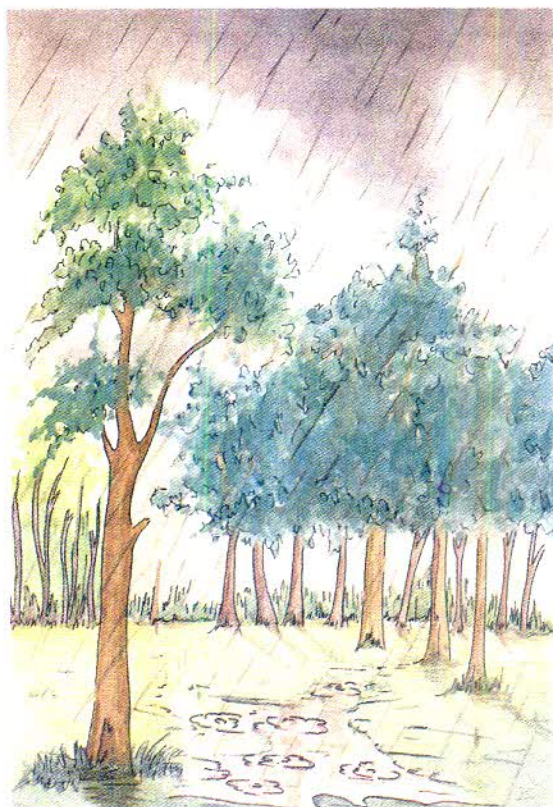


Trees provide us with shade and shelter. They make the atmosphere pleasant around us and keep the climate moderate. Greenery is soothing to the eye and mind. Trees are important for our health because they filter the air and so help prevent air pollution. They are great assets.

Trees bring us great benefits. Many of these are obvious and easy to see. For example, they provide material for housing, furniture and fuel, as well as fruits, animal fodder and valuable herbs. But trees bring many benefits which are not immediately obvious too. For example, trees protect the soil from the sun and winds; trees help to make the land fertile because their leaves act as fertiliser; they preserve wildlife; they provide work and jobs for many people and in this way give support to the economy of the country.



Trees help the land to use the rain. They protect the soil from heavy rain and hold it together so that it is not easily washed away. Trees also help the rain to soak into the ground and hold it there. This helps plants to grow, so that we get better crop yields and a green, pleasant environment. Water which sinks into the ground is the source of water for springs and small streams. If we want the rain to benefit the land, we must save trees.



SUMMARY

Trees are a great benefit because they :

1. *Provide shade and shelter.*
2. *Keep the atmosphere and temperature moderate.*
3. *Provide beauty and greenery.*
4. *Keep the air clean.*
5. *Supply us with wood for different purposes.*
6. *Provide work for people.*
7. *Provide us with fruit.*
8. *Increase the fertility of soil.*
9. *Help the land to use the rain.*
10. *Keep springs and small streams flowing.*

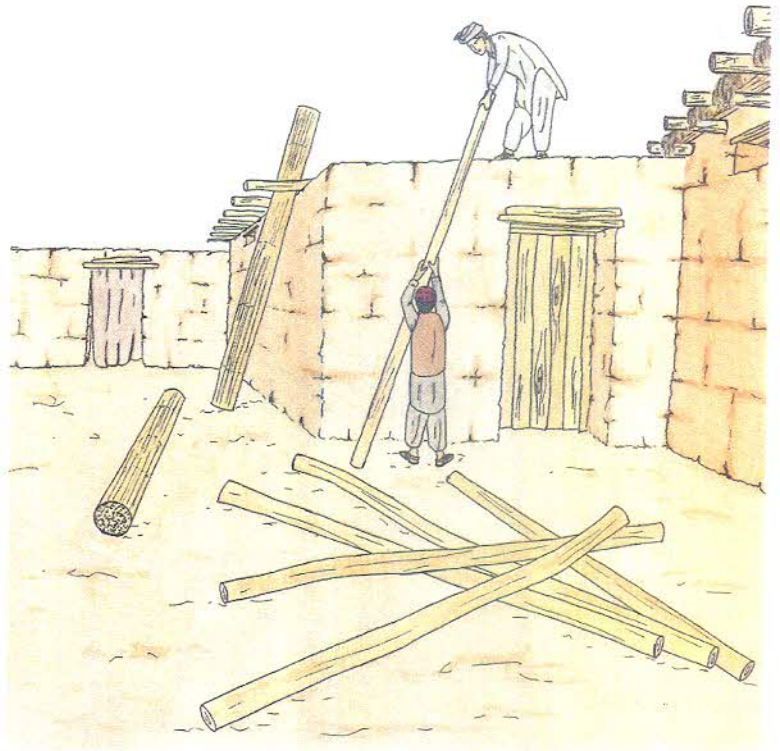
1.2. THE CAUSES OF DEFORESTATION

Where have all the trees gone ?

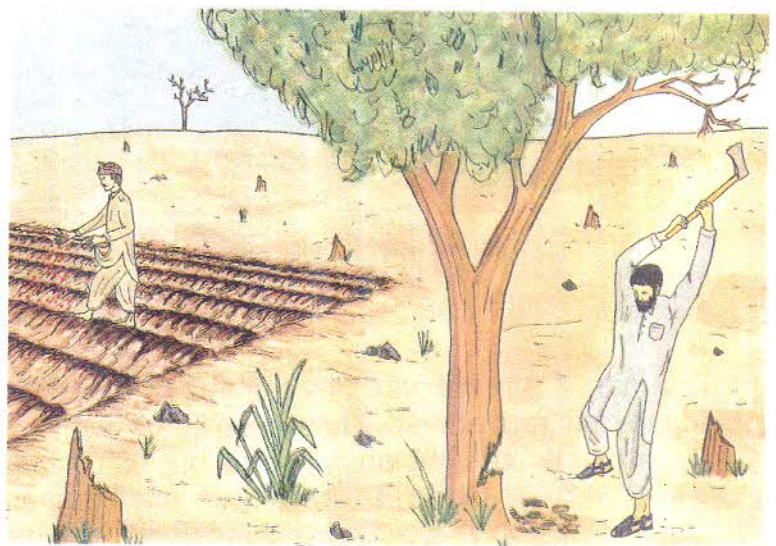


Women in our villages make fires two or three times a day in their traditional ovens and stoves. These traditional ovens and stoves use a lot of fuel. This fuel is either bought or collected but either way trees somewhere have to be cut down. If there is no proper management or protection of forests and no re-planting to replace trees cut down, forests start to disappear.

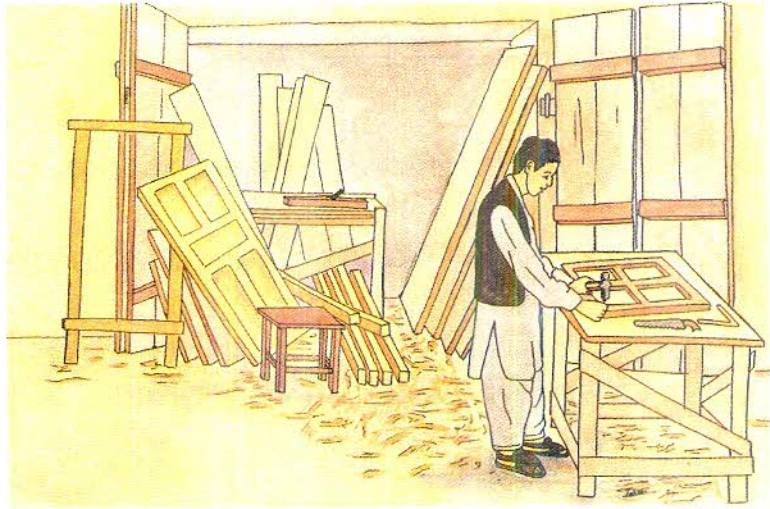
In our country a lot of wood is used to build houses. The roofs in particular use large logs and big pieces of timber. The logs also need to be replaced regularly and so even more wood gets used. As a result, many of the trees near villages and in the mountains have been cut down. In many places they have not been replaced with new trees



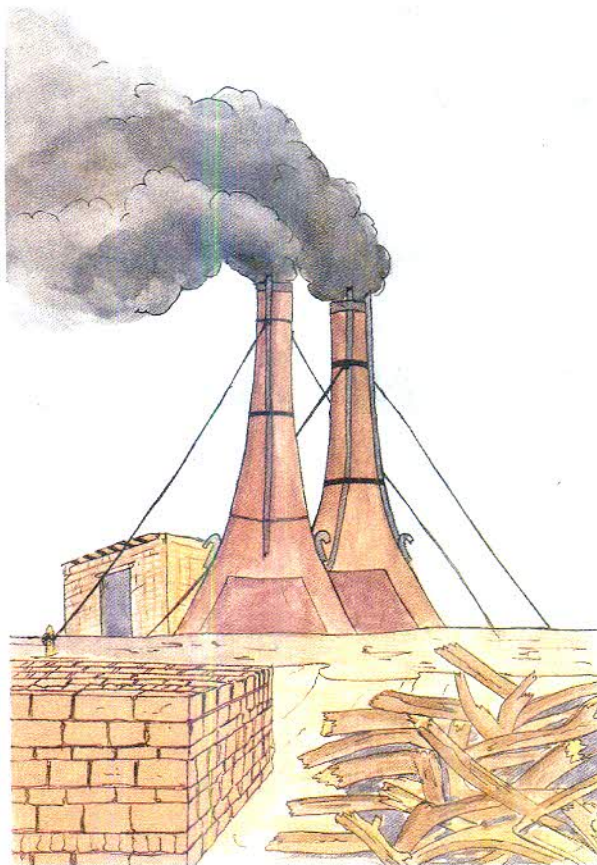
As our population grows rapidly, so does the demand for arable land. To increase production people cut trees and bring more and more land under cultivation. Now many hillsides and mountainsides have been cleared of trees so as to try and grow crops.



Furniture making in Pakistan and Afghanistan has become a big industry. It uses a lot of wood. In developed countries, many other materials besides wood are used for furniture, and a lot of tree planting is also done to renew wood supplies. In our country people still depend almost entirely on wood for furniture making.



There are several industries which burn a lot of wood. For example, in brick making a lot of wood is needed to fire the furnaces. Processing tobacco, making gur, and blacksmithing also use a lot of wood and contribute to deforestation.



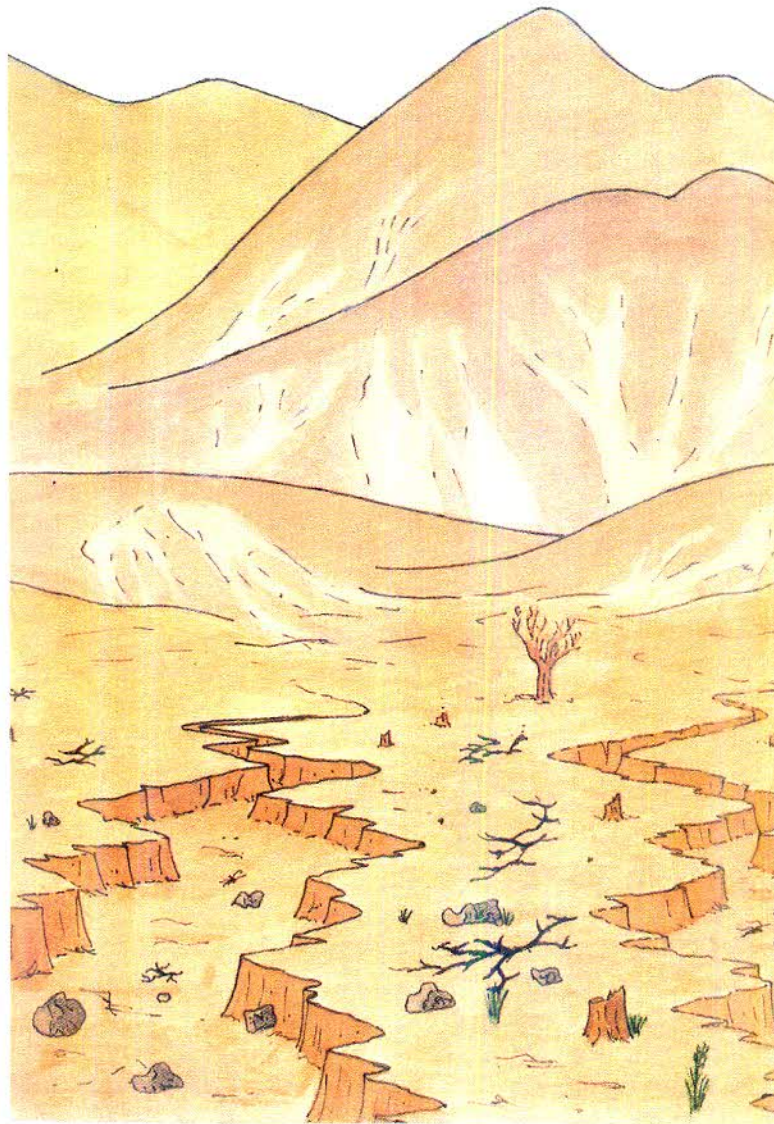
SUMMARY

The main causes of deforestation are :

1. *Cutting trees for firewood to use in the home.*
2. *Cutting trees for timber to construct and repair houses.*
3. *Cutting trees to clear land for cultivation.*
4. *Cutting trees for wood to make furniture.*
5. *Cutting trees for firewood for use by small businesses like brick making, 'gur' making and blacksmiths.*
6. *Cutting trees for firewood to use in the tobacco industry.*
7. *Failure to take care of existing forests.*
8. *Failure to plant enough trees to replace those cut down.*

1.3. THE EFFECTS OF DEFORESTATION

Without trees, we are all poorer ;

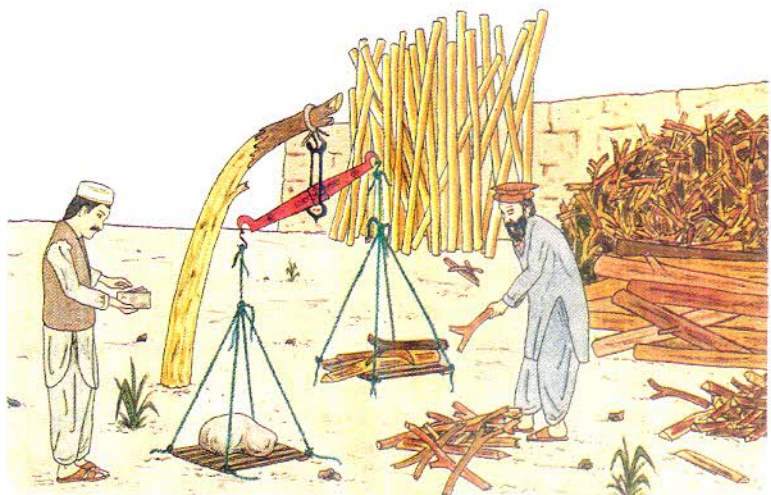


Deforestation leads to soil erosion and floods. Without trees there is nothing to hold the soil and heavy rains wash it away. Crops and fields are destroyed. Without trees the water runs quickly over the surface of the ground forming gullies on hillsides and causing floods which further damage the land. The rain cannot sink deep into the ground so springs and small streams begin to dry up. Without trees the local climate becomes hotter. The land eventually turns to desert and has to be abandoned.

Because deforestation results in a shortage of fuel wood, women have to use agricultural wastes such as dung and pressed sugarcane. But these are also natural fertilizers, so removing them from the soil results in low crop yields. We are still not self sufficient in food in Pakistan or Afghanistan.



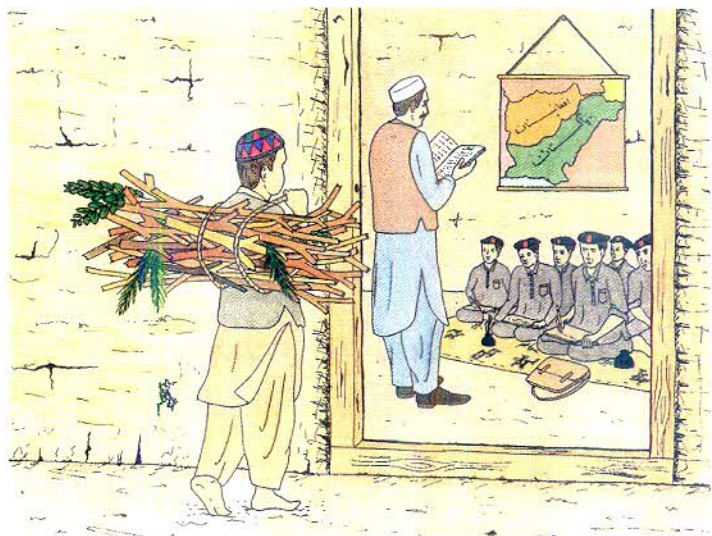
Another major problem is that deforestation is increasing people's financial problems. As more trees are cut down, so the price of wood gets higher because fewer trees are left. People using wood as fuel have to spend more and more of their income on fuel. This leaves no money for other necessities like good food, education and health. Since Pakistan and Afghanistan are basically agricultural countries and few people earn a lot of money, looking after our forests is particularly important.



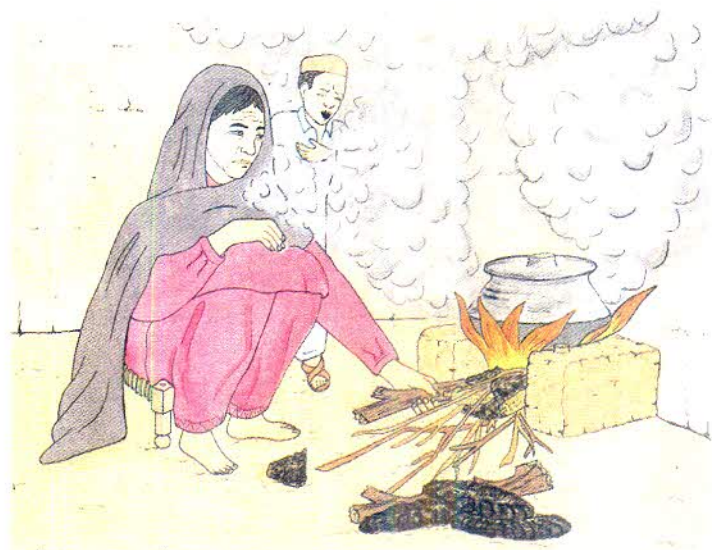
People have to use wood for cooking, so when the trees have been cut down from areas near their homes men, women and children have to search harder and longer for fuel. They waste valuable time and energy carrying heavy burdens over long distances. As a result they neglect other important activities.



Education is the basic right of every human child, yet the literacy rate in Pakistan and Afghanistan is very low. To have wood for their stoves, mothers put the future of their children at risk. With deforestation, the price of wood has increased so much that poor people cannot buy it. They have to send their children out to search for wood and as a result they miss their school classes, so their desire to obtain knowledge remains unfulfilled for ever.



One major effect of deforestation is a shortage of wood. Women have to use inferior types of fuel, like cow dung, maize cobs and leaves. These types of fuel produce a great deal of smoke which is very dangerous to health. One of the main causes of eye, lung and throat health problems among women is the inhalation of smoke from ovens and stoves. Smoke also causes headaches. Without trees to filter and purify the air then general air pollution increases affecting all of us.



SUMMARY

Without trees :

1. *There is no natural way to hold back the rain and prevent floods, so great destruction is caused by heavy rain.*
2. *Rain does not sink deep into the ground, so springs and small streams dry up .*
3. *The local climate becomes hotter.*
4. *Land becomes barren and ultimately turns into desert.*
5. *The soil loses its fertility and as a result crop yields are poor.*
6. *Fuel is scarce and the price of wood for cooking, furniture and construction becomes very high.*
7. *Poor people waste time collecting wood over great distances.*
8. *Children have to collect fuel instead of going to school.*
9. *Women are forced to use inferior types of fuel which produce toxic smoke and contribute to health problems.*
10. *Air pollution increases.*

1.4. THE ADVANTAGES OF SAVING FUEL

Save fuel, save trees, save time, save money :

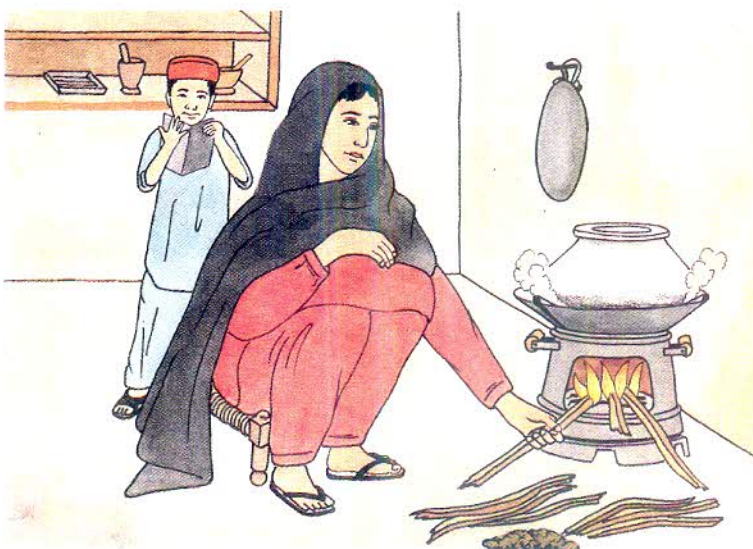


By finding ways to save fuel, for example, using improved stoves or improved bakeries instead of our own tandoors, we are helping to save trees. Trees provide us with many benefits. (See Section 1.1.)

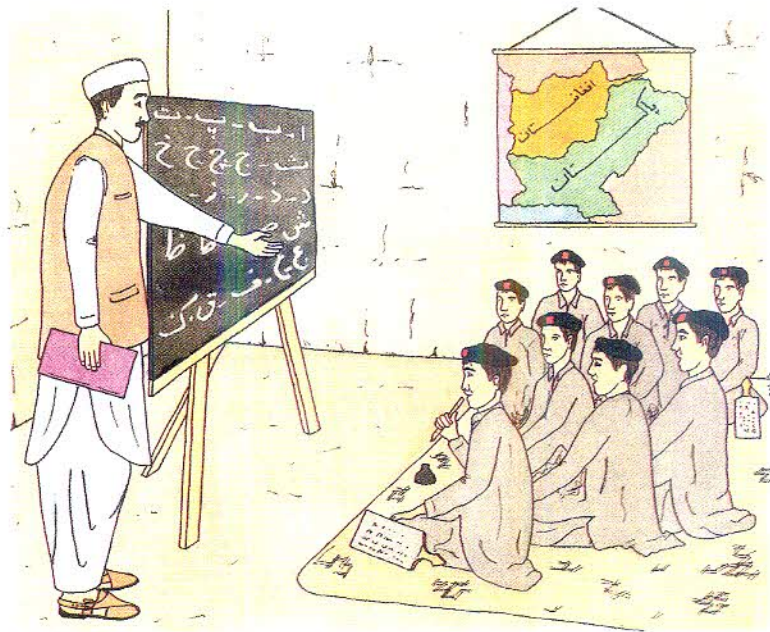
By saving fuel, we can keep agricultural wastes like dung for use as fertilisers on the fields. This is a cheap and natural way to improve crop yields.



Improved metal or clay stoves produce less toxic smoke than traditional clay stoves, so housewives and their families can be saved from eye, lung and throat health problems caused by smoke.



By saving fuel we help children in our villages get proper education. They are saved from the tough and tiring job of collecting wood. And their precious time, energy and attention can all be concentrated on getting education for a better life in the future.



Saving fuel means saving money. This money can then be spent on other important things in life, for example, on better food, clothing and healthcare. Whenever we save fuel we are also saving our trees.



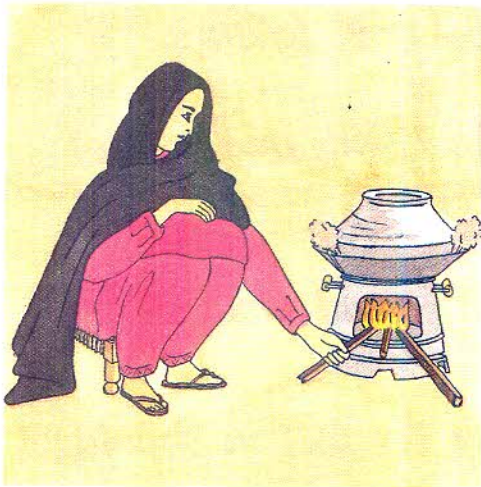
SUMMARY

By saving fuel :

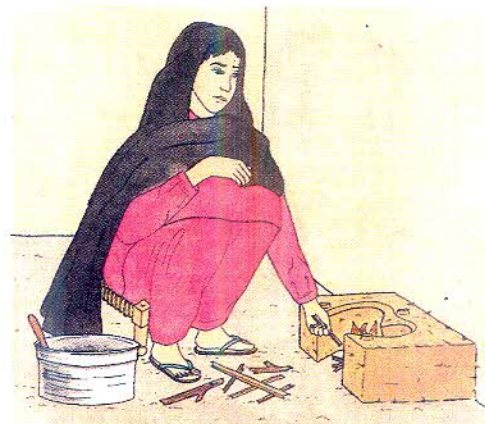
1. *We are helping to preserve trees and greenery everywhere.*
2. *We are saving trees which help conserve the soil and keep it fertile.*
3. *We are saving trees and forests which help prevent floods and protect the land.*
4. *Less dung and other agricultural wastes are burnt, so can be put on the land as a natural fertilizer.*
5. *Less harm is caused to women's health by smoke from cooking fires.*
6. *Less time is wasted searching for fuel.*
7. *Men and children are spared the difficult task of collecting fuel from far away.*
8. *Less money has to be spent on buying fuelwood.*
9. *More money and time are available for important things in life like education, food and healthcare.*

PART TWO - WAYS OF SAVING FUEL

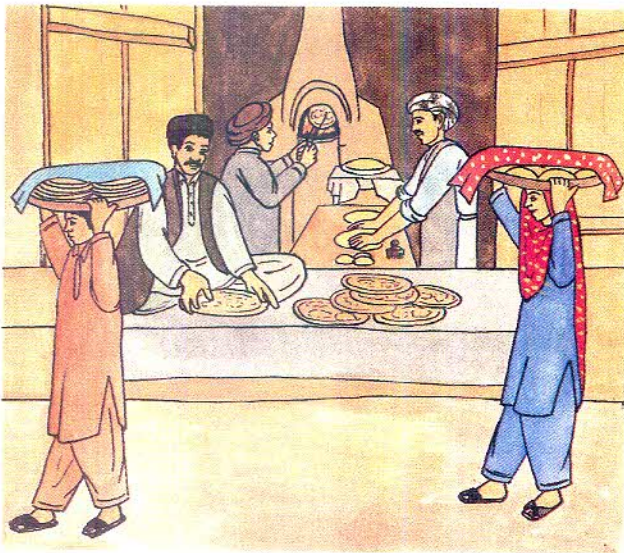
The Domestic Energy Saving Project started work with the help of German experts in 1984. Its main aim is to reduce the use of wood as fuel for domestic purposes in Pakistani and Afghan households. To achieve this, the project has introduced cooking and baking devices and house construction methods which will help preserve trees by reducing the use of wood and fuel in our communities. The project is promoting:-



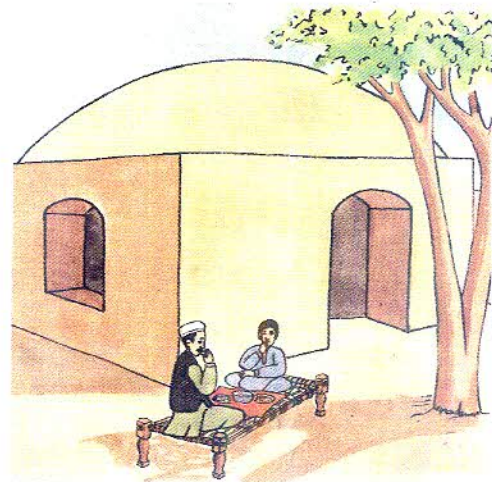
* Improved multipot metal stoves



* Improved traditional clay stoves



* Model bakeries



* Dome Houses

The project is also working to educate men and women about the importance of saving fuel and preserving trees.

2.1. HOW TO IMPROVE AND MAINTAIN A TRADITIONAL CLAY STOVE

The traditional clay stove will use more or less fuel depending on how it is made.

The correct way of constructing an improved traditional clay stove to make the best use of wood is as follows:-

- 1. Four parts of clay should be mixed with one part of straw.*
- 2. The clay should be free from pebbles and sand.*
- 3. The width of the door for putting the fuel in should not be more than 8 fingers.*
- 4. The height of the stove should be 8 fingers.*
- 5. The gap between the pot and the stove provided by the pot support should not be more than one finger.*
- 6. The stove should be well maintained so that it has no cracks or broken pot supports.*
- 7. The stove should be built in a place sheltered from the wind.*

Women know how to make stoves from clay, and with a few simple adjustments they can make stoves which use less fuel. When they mix clay and straw, the ideal proportions are four parts clay to one part straw. This is the proportion that has been found most effective in tests in the Domestic Energy Saving Project's workshops.

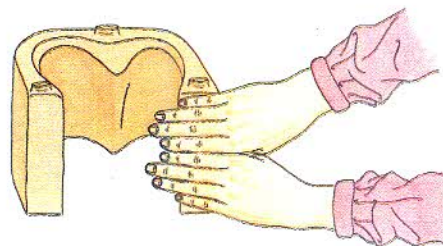


For centuries we have made fires in traditional stoves in our homes. Modern knowledge and experience has proved that if these stoves are constructed to careful measurements, they can be even more useful for us. Clay stoves of different sizes for different types of pots can be made, but they should always have the following measurements:-

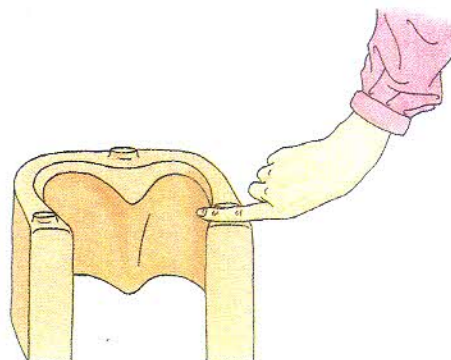
The width of the door for putting the fuel in should not be more than 8 fingers.



The height of the walls of an improved clay stove should not be more than 8 fingers. If the walls are too high, the heat is wasted and more fuel will be needed.

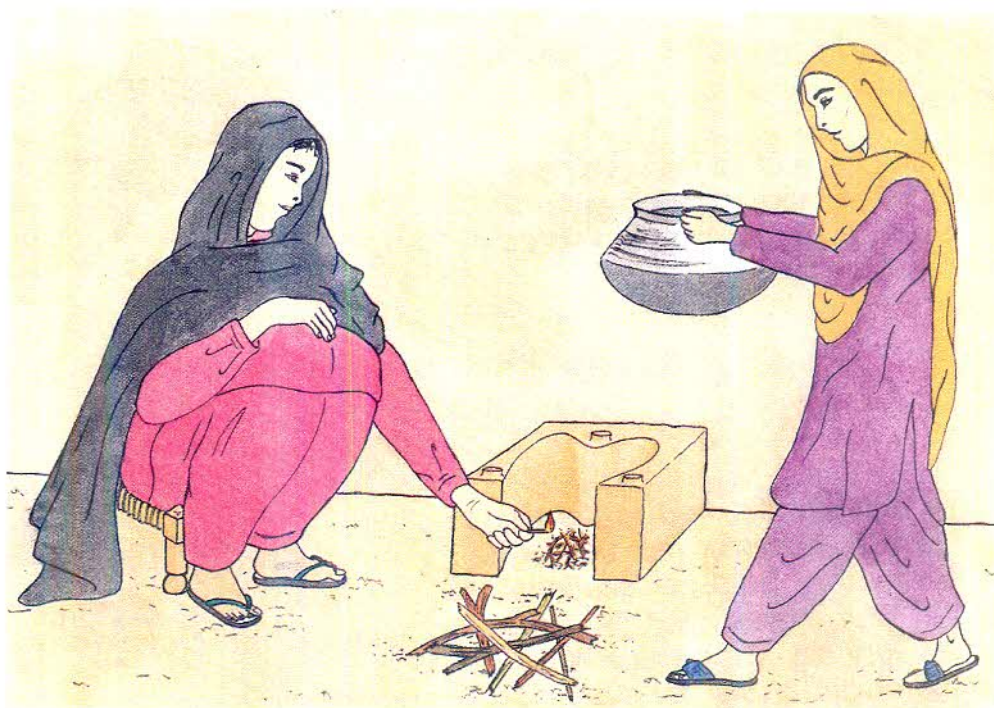


Women know well that the flow of the air through a stove is essential for burning fuel. That is why they build pot supports on the walls of their stoves. But the supports are often very big. To make a better clay stove, the height of the pot supports should not be more than 1 finger.





A well maintained stove uses less fuel and produces cleaner smoke than a stove which has cracks or broken pot supports. Traditional clay stoves crack and break very easily and should be maintained regularly. Fresh mud should be coated over the cracks whenever they appear to avoid heat loss, and new supports should be made as soon as the old ones break.



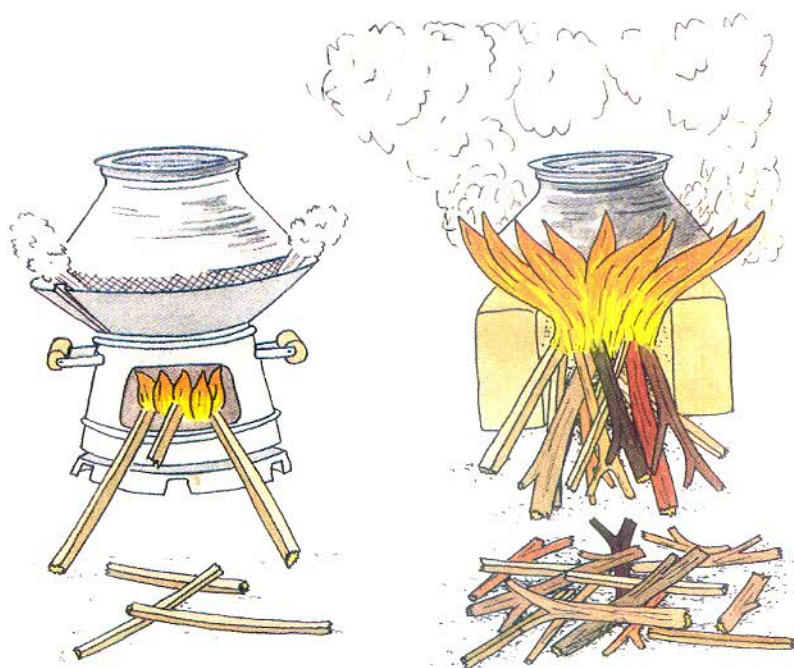
2.2. THE WOOD SAVING MULTIPOT STOVE

The Domestic Energy Saving Project has designed a special woodsaving “multipot” stove, which uses less fuel than traditional clay stoves and saves money and time.

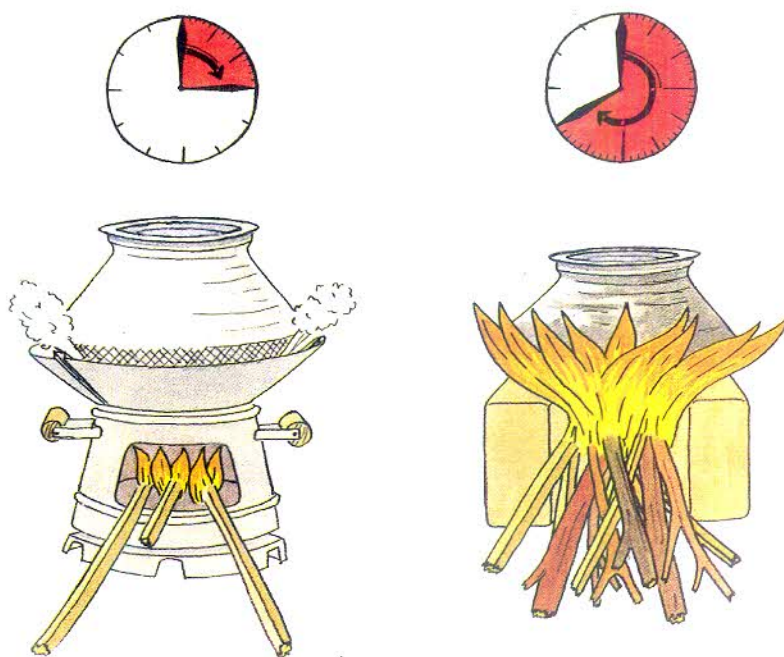
Multipot stoves are:

- * Wood saving.*
- * Money saving for those who have to buy their wood.*
- * Healthier and more hygienic than traditional stoves.*
- * Portable.*
- * Durable.*
- * Versatile and can be used with any size of pot.*
- * Easily maintained.*
- * Safe.*

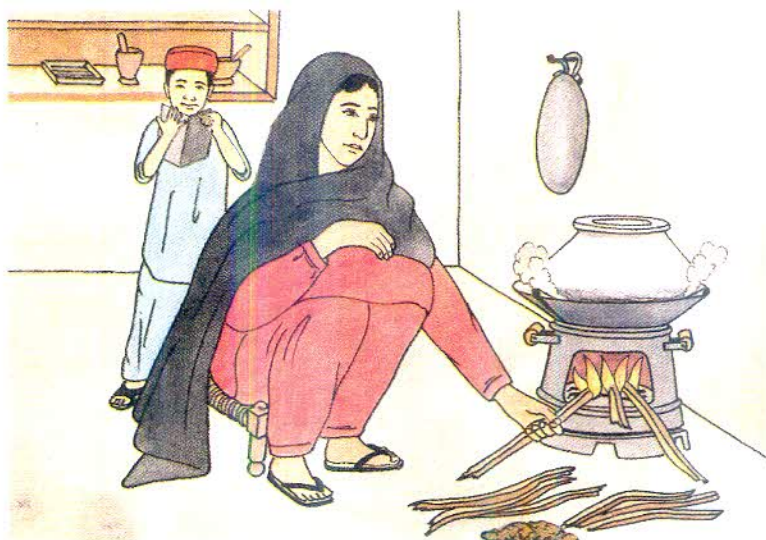
The wood-saving multipot stove was originally designed in the Domestic Energy Saving Project's own workshop. It has been made to use much less wood than traditional clay stoves. The design also ensures that the maximum energy is gained when burning the fuel. The size of the combustion chamber, that is the place for the wood to be burned, is ideal for a single family's cooking requirements. This combustion chamber does not allow big logs to be burned, and in this way helps save fuel. The ventilation holes also ensure that plenty of air reaches the wood so that it is burnt efficiently.



In giving the multipot stove its present structure, many other points were kept in mind. One main point was that the stove should cook quickly. Our traditional stoves cook slowly because they waste heat. The multipot stove's conical shape ensures that all the heat is directed onto the pot. This saves time and fuel.



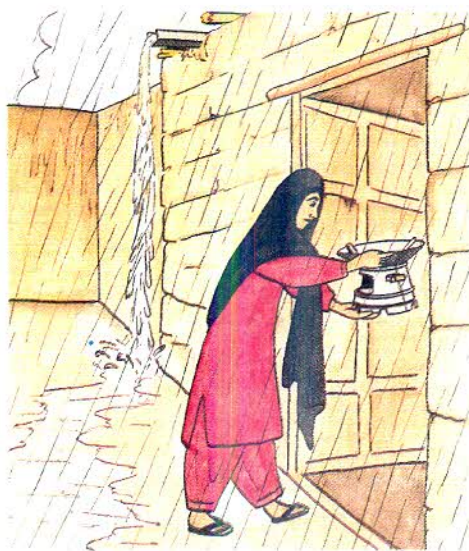
The multipot stove produces cleaner smoke than the traditional clay stove. So multipot stoves help improve the health of our village women, who often get sick with health problems caused by smoke.

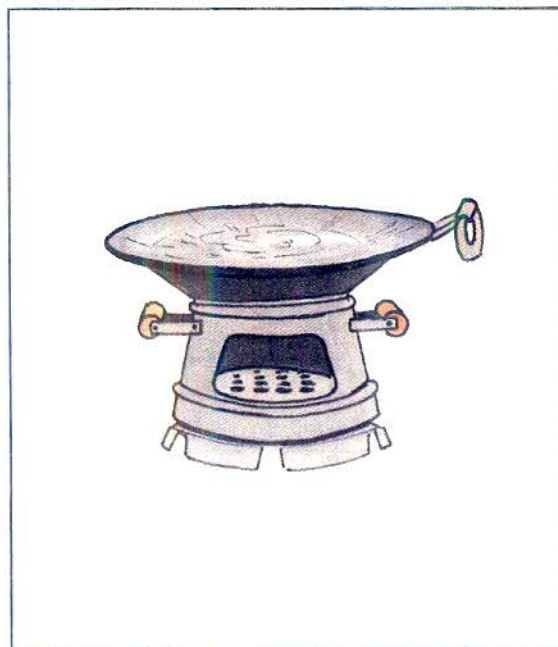
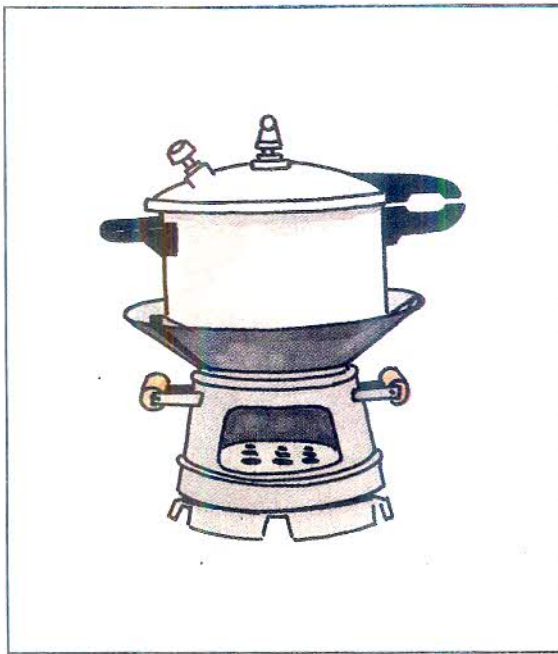


The multipot stove is a portable stove. It has handles made from pieces of wood which make it easy to carry, even when it is hot. The grate or holes in the bottom of it are specially designed to take in the correct amount of air for efficient burning. The hole in the back allows the ash which collects in the bottom of the stove to be easily removed.



The multipot stove is made of metal and is durable. A study has shown that it will still be in good condition after one year, if properly maintained. Maintaining it is easy. There is no need of mud plastering as with the traditional clay stove. When it rains it can easily be carried indoors.





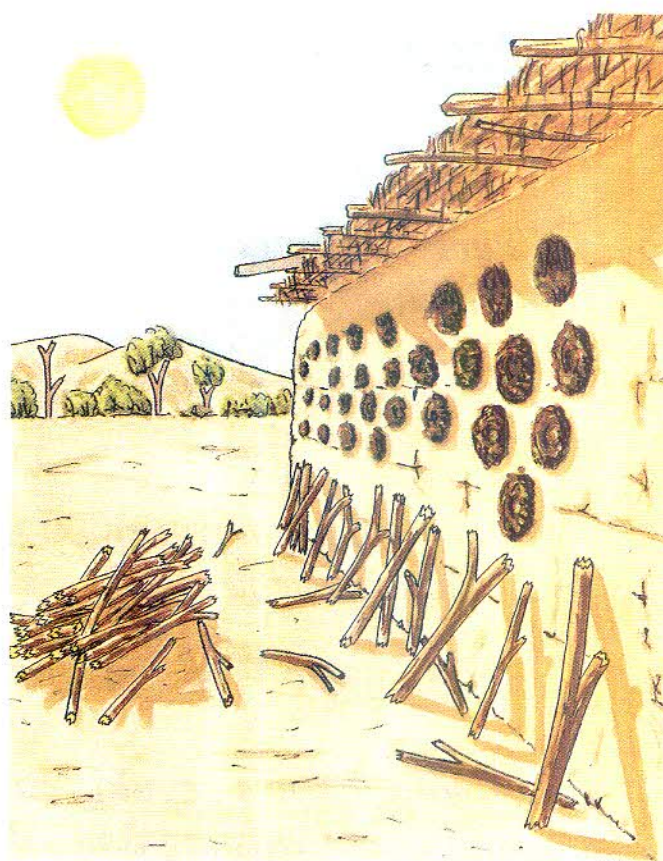
The multipot stove is very versatile and can be used with many different kinds of pots; with big ones or small ones, with tawa, kettles, or pressure cookers.

2.3. GUIDELINES FOR BETTER COOKING

There are many simple ways of saving fuel when cooking:

- 1. Use wood that is dry and store it so that it does not get wet.*
- 2. Dry wood before use by putting it in the sun or next to a stove or fire.*
- 3. Cut the wood for your fire into thin pieces.*
- 4. Attend the fire regularly to make sure it is doing well and is not wasting fuel.*
- 5. Do not stuff a lot of wood into the stove at one time but add one piece at a time so that it can burn properly.*
- 6. Keep lids on your pots.*
- 7. Simmer food when cooking as this cooks it almost as fast as boiling but needs less fuel.*
- 8. Cook out of the wind.*
- 9. Use residual heat from your clay stove or tandoor to precook the next meal, or to make tea.*

Using dry wood for making a fire is always best. Dry wood catches fire easily and produces less smoke. It produces a good, hot flame, which cooks food quickly so less wood is needed. Wet wood uses the heat of the fire to become dry first before it will burn, so less heat is left for cooking the food. Wood should be dried in the sun or next to the stove fire before use. Then it should be stored so that it does not become wet again.



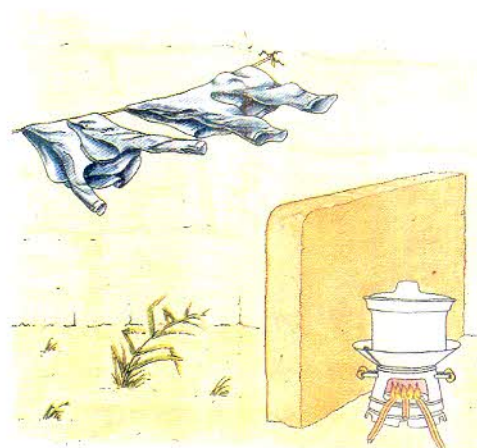
When the wood has been dried, break it into thin, long pieces. The small pieces of wood should be added to the stove a piece at a time economically, so wood is not wasted. Half burned pieces of wood should be taken out of the fire after cooking is finished and used for cooking the next meal.



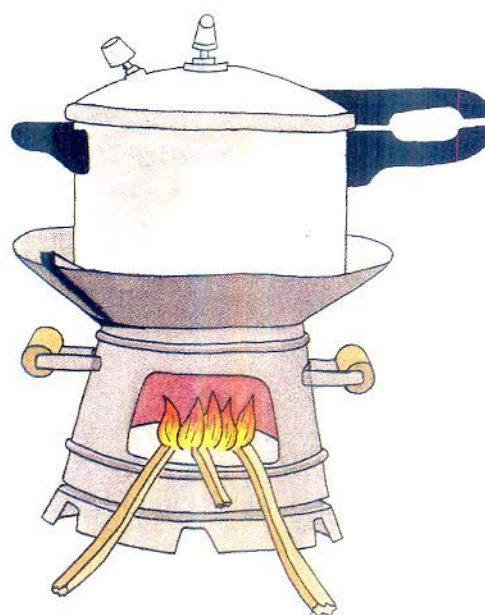
When cooking, a tight lid should be put on the pot. This saves time and fuel because it keeps the heat inside the pot and helps the food to cook faster. It also prevents flies and dirt dropping into the pot. When the water starts boiling, less wood should be added to the stove so that the food simmers. This cooks the food almost as fast as continuous boiling but uses less fuel.



Always try to make your fire out of the wind. If the wind is blowing, place your stove in the verandah or inside or make a shelter around it. If the flames are blown about by the wind then a lot of heat will be wasted. Try not to let the fire go out while you are cooking, but keep it burning evenly. Do not stuff a lot of wood into the stove to try and make it cook faster. This makes the stove cook less well and produces more smoke. Use any heat still left at the end to pre-cook food for your next meal or to boil water for tea.



Among modern inventions, the pressure cooker is a great blessing for our women. Pressure cookers can cook food very quickly and so save time, fuel and money. They make women's lives easier, so the more families which use pressure cookers the better.



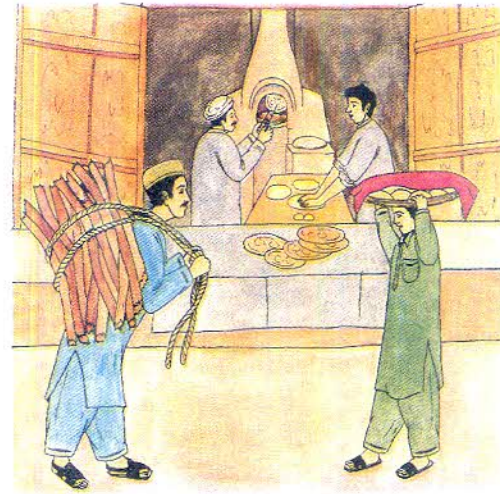
2.4. THE ENERGY SAVING COMMUNITY BAKERY

New energy saving bakeries can cook nan more quickly while using less fuel and are also healthier for bakers. They are a benefit to the whole community.

Energy saving community bakeries:

- * save time.*
- * save fuel.*
- * protect health.*
- * enable large amounts of nan to be cooked quickly.*
- * save money.*
- * are safer and healthier than traditional ones.*
- * create job opportunities.*
- * save men and children the chore of collecting fuel.*

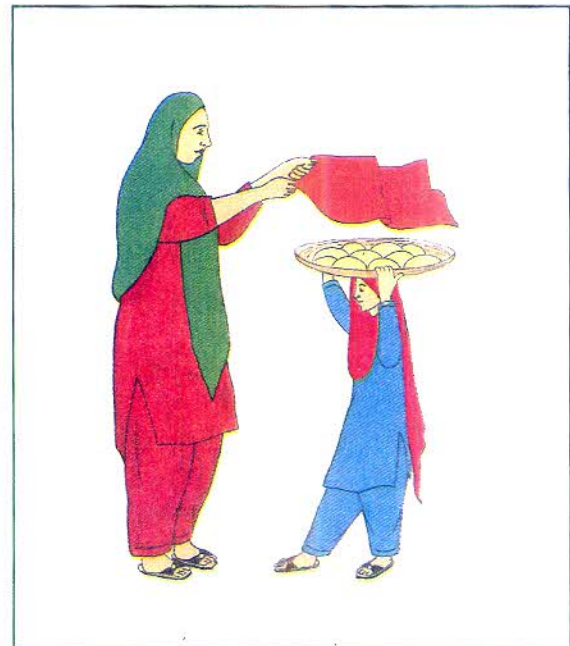
Many families spend either a lot of time collecting wood for their tandoors, or a lot of money buying fuel. If they used bakeries to cook nan instead of lighting their tandoors, they could save themselves time or money, and help save trees at the same time.



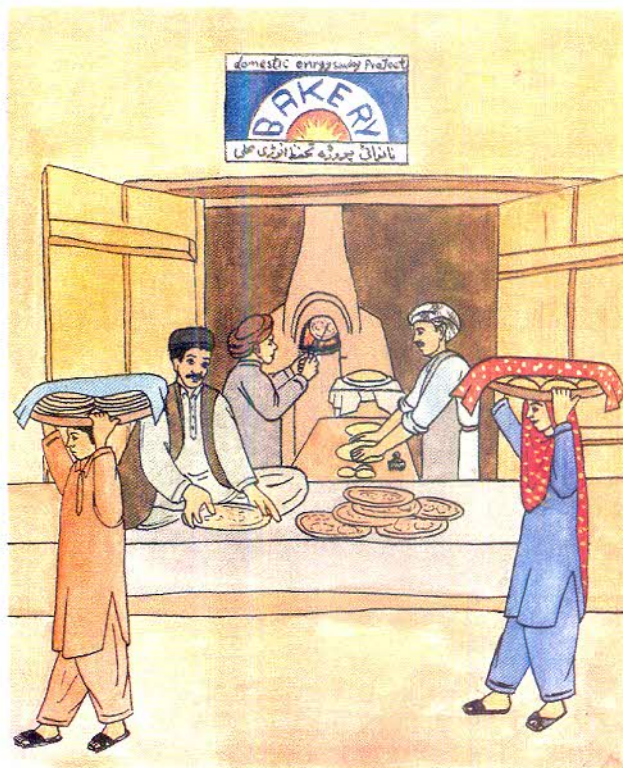
Cooking nan in a traditional tandoor is very common in our villages. This process uses a lot of fuel. Women are directly exposed to heat and smoke. This has a very bad effect on their health causing eye and chest problems. Making nan in a traditional stove also takes a lot of time, so children are neglected and women do not have time to do other things.



If women make dough and send it with their children to new energy-saving community bakeries to be baked, instead of lighting their tandoors, there are many benefits. They can avoid exposing themselves to the smoke and fumes from the tandoors and prepare their families meals more quickly and easily. The cost of having dough baked at the bakeries is very small. So if women send their dough to a bakery instead of lighting their tandoors they will either save money spent on fuel or save the time their families would have to spend collecting fuel.



The new energy-saving community bakeries play a very important role in creating jobs for people. Normally two or three people work in a new bakery, but sometimes more are employed depending on demand for nan in the community. These bakeries have been specially designed by the Domestic Energy Saving Project. They not only use less fuel wood than traditional bakery ovens but also protect the baker from direct heat and from smoke, so they are therefore better for the health of bakers than traditional bakery ovens.



With the time women save by using bakeries instead of lighting their own tandoors they can do other domestic jobs to earn money, for example, embroidery and sewing. Men, women and children are also spared the tiresome task of collecting fuel wood from great distances for the tandoors.



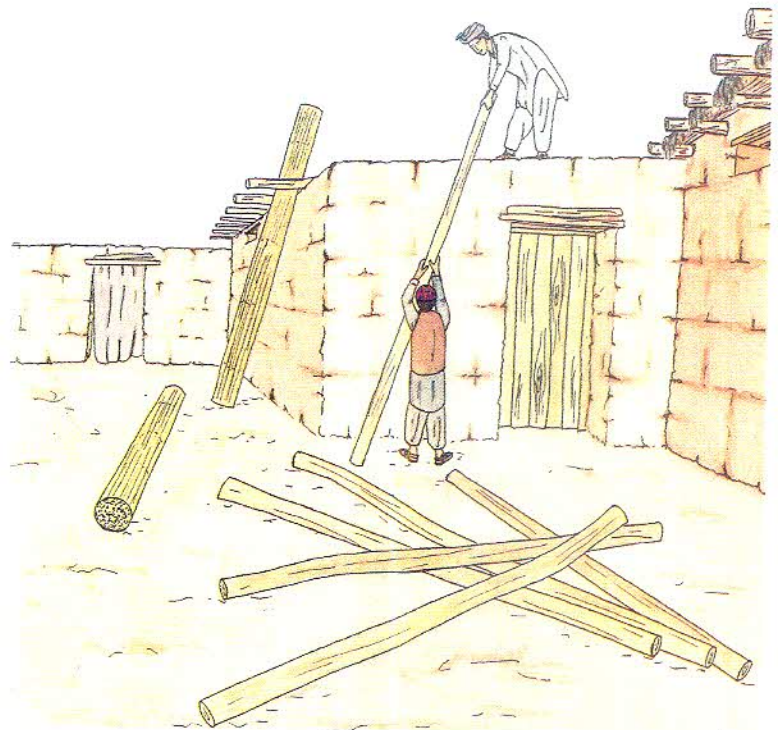
2.5. DOME HOUSES

Houses with domes can be built which do not use any wood.

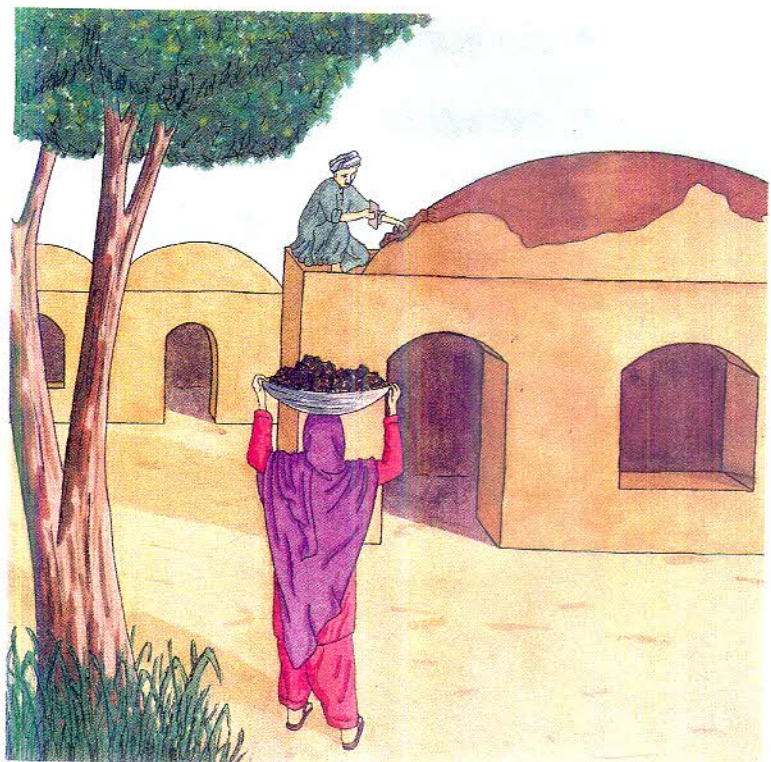
Dome houses are:

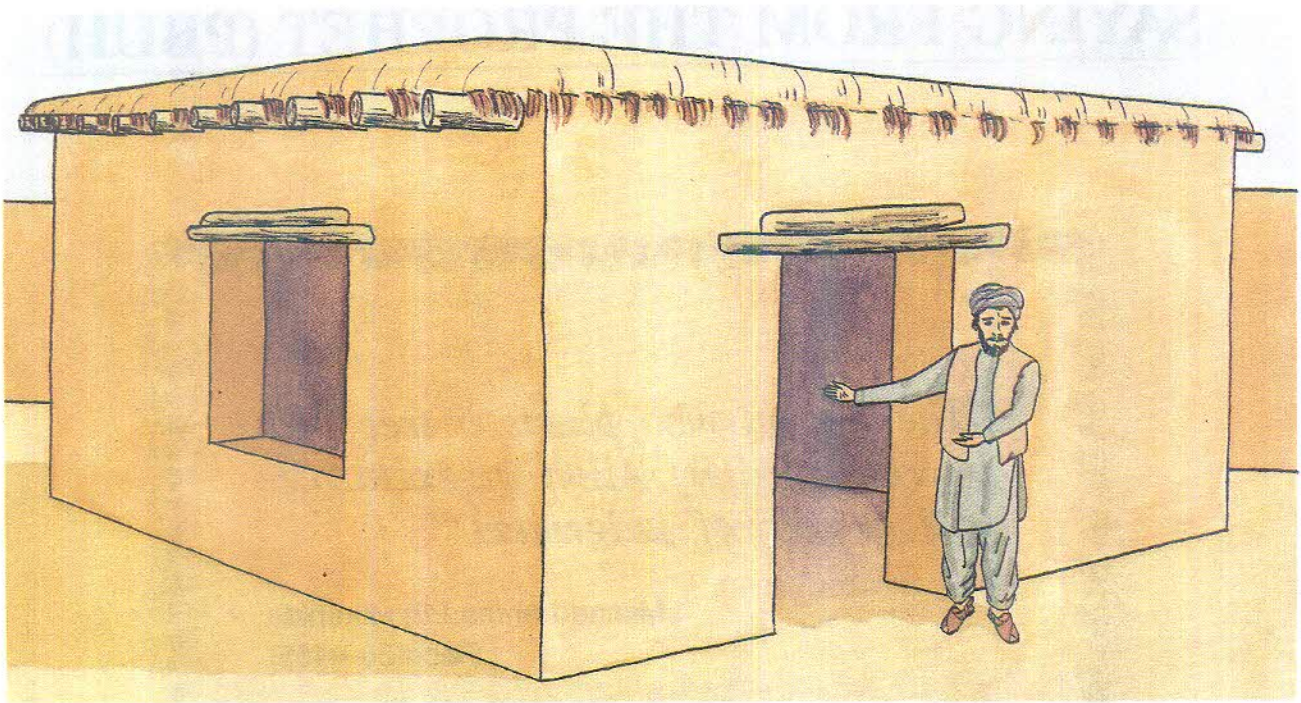
- * cheap.*
- * easy to maintain.*
- * do not use wood.*
- * very strong and stable.*
- * warm in winter and cool in summer.*
- * fire proof.*
- * do not leak in heavy rain.*
- * beautiful.*

As the population of Pakistan and Afghanistan grows, so the demand for houses increases. Traditional houses are constructed using a lot of wood. The roof in particular uses a lot of timber. For every log used, one tree has to be cut down. In a typical traditional house upto 20 trees may be used. Moreover, it is very expensive to maintain a traditional house. The wood gets eaten by termites and has to be replaced regularly, the pillars supporting the roof have to be replaced and the roof itself and the plaster have to be remade as well.

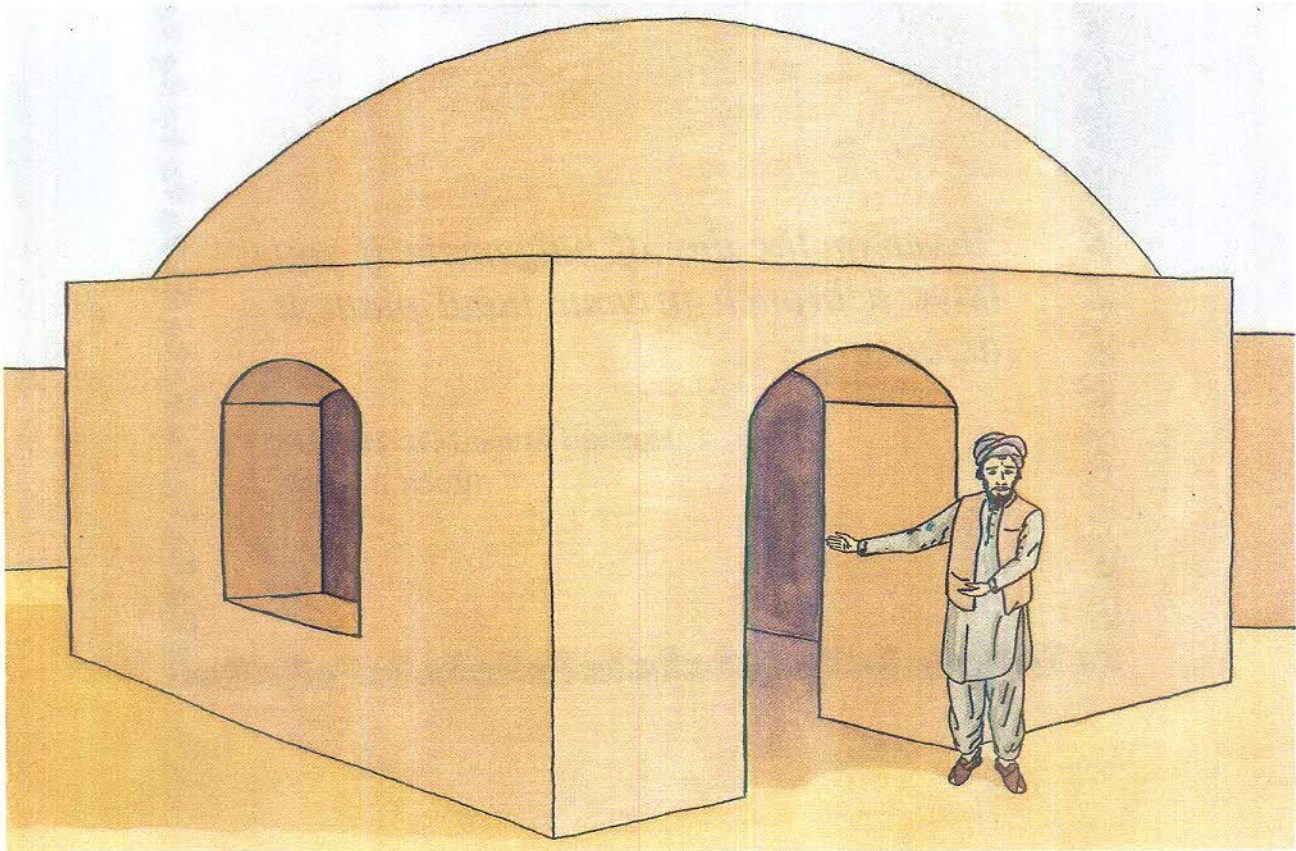


The Domestic Energy Saving Project has designed a special kind of house to solve some of these problems. These new houses are called dome houses and are built without using any wood. Instead of the traditional roof, a dome structure made with clay bricks is built. About 1200 dome houses have been built for Afghan Refugees. The wood this has saved means that a small forest somewhere has already been saved. The dome structure not only avoids the use of timber for the wood, but has many other advantages. Its shape helps water drain off the roof and prevents leaks in the rain. It needs very little maintenance other than occasional replastering, and men and women can do this very easily on their own homes.





Dome houses are strong and stable. The technique used to construct a dome house means that its walls are much thicker than those of a traditional house. This makes it very strong. Because the walls are so thick, dome houses are very well insulated and are cool in summer and warm in winter.



SAYING FROM THE PROPHET (PBUH)

“The person who plants a tree will be rewarded by Allah in exchange until the day of judgement.”

Masnad Ahmad Bin Humble
(Book 5 - 415)



“Even on the day of judgement if you have a branch in your hand plant it at once.”

Masnad Ahmad Bin Humble
(Book 3 - 184)

"He is the one who brought forth the rain from the skies, and through the rain he brought forth every kind of plant. And from the rain, green fields and trees came forth. And behold, the trees grew, and bore fruit and were ripe. And these things bear sign only for those who believe."

Para 7, Surah Al Inam

